ABSTRACT OF THE DISCLOSURE

Single layer anti-reflective hard-coat and methods of making same are disclosed and in particular comprise a structured surface, preferably a nano-structured surface. The hard-coat preferably a hardness above 0.5 GPa, more preferably above 0.7 GPa and most preferably above 1.0 GPa as measured by nano-indentation and/or a reduced tensile modulus above 3 GPa, more preferably above 8.5 GPa or 20 GPa, most preferably above 40 GPa as measured by nano-indentation and/or a scratch resistance above 5 mJ μm-3, preferably above 15 or 30 mJ μm-3, preferably above 60 mJ μm-3 as measured by nano-indentation, and/or contains an amount of inorganic nano-particles from 5 to 75 weight %, preferably from 15 to 50 weight % relative to the weight of the second material present in the hard-coat. Preferably, the spatial length scale of the refractive index gradient in the single layer hard-coat is between 10 and 1000 nm; in particular between 100 and 200 nm.